

ABSTRACT

A digital underwater camera, virtually leakproof even at extreme depths, is inexpensively hermetically sealed through being cast, most preferably, into clear plastic totally without seams, seals or O-rings. No penetrating wires are needed to control the camera; digital electrical signals for downloading image information from the camera being converted to infrared optical or, most preferably, radio signals that are communicated through the clear housing to an infrared or radio receiver which in turn preferably connects to a picture-capturing personal computer with operating software.

Operation of the camera's electrical shutter circuit is through the housing (i) by manually moving a magnet relative to an internal sensor, typically a Hall-effect sensor or a reed sensor, or (ii) through a mechanical-optical coupling. Recharging a power source -- normally a battery -- for the digital camera and all associated circuitry within the housing transpires by inductively inducing an alternating current in an coil internal to the housing, with subsequent rectification and conditioning of this current. The entire camera, or an adjustable lens assembly only, may be filled with clear liquid.